

Academic Achievement of Bilingual and Non-Bilingual Education Degree Students

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ABSTRACT: The purpose of this study is to examine the academic performance of bilingual and non-bilingual students pursuing a primary school teaching degree and their level of satisfaction with the degree program. To this end, a sample of 1,057 students from the Faculty of Education at the University of Granada was used: 427 bilingual students (85 males and 342 females) and 630 non-bilinguals (202 males and 428 females), who followed the same curriculum and syllabuses (19 subjects in total). While the results obtained demonstrate no significant differences between the two groups in eight subjects, differences in favor of the non-bilingual group were present in two subjects: Mathematics and Learning disabilities. In the remaining nine subjects, four of which belonged to the students' specialty of teaching English as a foreign language, the bilingual students outperformed the non-bilinguals despite the potential challenge of doing a degree in a foreign language. Satisfaction with the curriculum was slightly greater among the non-bilingual students ($m=3.81$) than the bilingual students ($m=3.73$), although these differences were not significant.

Keywords: Academic achievement, academic performance, EMI students, non-EMI students, bilingual degrees, non-bilingual degrees, CLIL

Rendimiento académico de los estudiantes de titulaciones universitarias bilingües y no bilingües de Magisterio

RESUMEN: Este estudio se propone investigar el rendimiento académico de los alumnos de la titulación bilingüe y no bilingüe del Grado de Maestro y el grado de satisfacción que muestran hacia sus programas de estudios. Para ello, se utilizó una muestra de 1057 alumnos de la Facultad de CC de la Educación de la Universidad de Granada: 427 alumnos de la titulación bilingüe (85 chicos y 342 chicas) y 630 (202 chicos y 428 chicas) de la no-bilingüe, que cursaban las mismas asignaturas y los mismos programas (en total 19). Los resultados obtenidos nos muestran que no existen diferencias significativas entre los dos colectivos en 8 asignaturas, sino solamente en dos: Mathematics y Learning disabilities, a favor de los estudiantes de la titulación no bilingüe. En las 9 asignaturas restantes (4 de ellas pertenecientes al itinerario de especialidad de lengua extranjera-inglés) los estudiantes de la titulación bilingüe obtuvieron mayor rendimiento académico que los no-bilingües, a pesar del reto que supone hacer una carrera en una lengua no materna.

La satisfacción con el programa de estudios resultó ser algo mayor en la titulación no-bilingüe ($m=3,81$) que en la bilingüe ($m=3,71$), aunque esas diferencias no son significativas.

Palabras Clave: Rendimiento académico, grados bilingües, grados no bilingües, inglés como medio de instrucción, AICLE.

1. INTRODUCTION

Modern society is characterized by the phenomenon of globalization in both commerce and education (Stewart, 1996). In this context, the use of English has become an essential tool not only for communication between peoples but also for access to the labor market. Furthermore, the European Union, which is based on the multinational and multilingual nature, has also been promoting language education. All these factors have caused educational institutions to introduce language study at all levels of education, especially English, which has succeeded in becoming the *lingua franca* (Seidlhofer, 2001). In addition, the consolidation of the European Higher Education Area (Benito & Cruz, 2005) has facilitated the accreditation of university degrees within the European Union and mobility of professors and students alike throughout all member states.

In recent years, great emphasis has been given to the importance of the internalization of academic studies in one's home country. As such, students are encouraged to develop their linguistic, communicative, academic, and professional competencies without the need to travel to those countries whose language they are studying (Nilsson, 2003; Coleman, 2006; Escobar & Arnau, 2018). The programs which employ English as the language of instruction at the university level are usually denominated by the acronym EMI (English Medium Instruction) (Dalton Puffer, 2011; Fortanet-Gómez, 2013; Doiz, Lasagabaster & Sierra, 2013; Schmidt-Unterberger, 2018; Madrid & Julius, 2020). Nonetheless, the acronyms ICLHE (Integrating Content and Language in Higher Education) (Wilkinson, 2004; Pérez Vidal, 2015), EMEMUS (English-Medium Education in Multilingual University Settings) (Dafouz-Milne & Smit, 2016), and CLIL (Content and Language Integrating Language) are used interchangeably although CLIL is more generic and commonly found in primary and secondary education (Ruiz de Zarobe & Jiménez Catalán, 2009; Coyle, Hood, & Marsh, 2010; Lasagabaster & Ruiz de Zarobe, 2010; Dalton Puffer, 2011; Madrid, D. & Hughes, 2011; Pérez Cañado, 2012; Marsh, Pérez Cañado & Ráez Padilla, 2015).

1.1. Bilingual university degrees

At the beginning of the 21st century, universities in Spain and from the rest of Europe began offering bilingual degrees with the objective of strengthening internalization, attaining higher levels of competitiveness, and recruiting foreign students (Ramos-García & Pavón, 2018). Wächter and Maiworm (2014, p. 16) investigated the proliferation of bilingual programs at European universities and their survey produced a total of 8,089 of such programs.

Professors in bilingual degree programs use a second language (English in most cases) as the medium of instruction to teach subject content. However, there is virtually no time dedicated to the teaching or learning of the language used for instruction. For this reason, it is better to employ the acronyms EMI or ICLHE in the university context. In contrast, primary and secondary school programs utilize the CLIL acronym more frequently due to the fact that language learning is integrated into the teaching of curricular content to a greater extent (Smit & Dafouz, 2012; Madrid & Julius, 2020). In this study we have employed "bilingual students" or "EMI students" and "non-bilingual students" or "non-EMI students" indistinctively as synonyms.

Within the wide range of bilingual degree programs in Spain, a great deal of diversity can be observed in the courses that are offered, the qualifications required for professors to teach in the various programs, and the admission criteria for students (Martín del Pozo, 2013; Fortanet-Gómez, 2013; Julius & Madrid, 2017; Madrid & Julius, 2020). In accordance with the study from Ramos-García and Pavón (2018, p. 40), there are a total of 292 bilingual degree courses offered, 39 of which are taught in English; and of the 63 dual degrees offered, 17 are offered in English. Of all of these, the most popular is the degree in Business Administration and Management. The objective of these internalization programs, with English as the language of instruction, is to provide an environment in which students can improve their linguistic and communicative competences while also developing their general, specific, and professional skills in each subject of the curriculum. As a result, students will enjoy enhanced employment prospects in an ever more international labor market.

Several studies have documented the benefits of bilingual degree courses at universities (Wilkinson, 2004; Airey, 2011; Smit & Dafouz, 2012; Coleman, 2013) and the weaknesses encountered by students enrolled in such programs (Escobar & Arnau, 2018; Madrid & Julius, 2020). Among those shortcomings, students noted the cursory and superficial nature of explanations provided in class, the periodic lack of linguistic competence in the language of instruction used, a slower-paced course, and the operation of a reduced course (Wilkinson, 2005; Yang, 2015; Arnau, Borrás-Comes, & Escobar, 2018). In addition, it is necessary to add that professors also mentioned the lack of linguistic competence on behalf of the students when understanding explanations in class (Sert, 2008; Lo & Lo, 2014; Byun et al 2011; Lin & He, 2019). Nevertheless, studies focused on the academic performance of EMI students are scarce due in part to the inherent difficulties of comparing students' grades from different institutions or the lack of access to those institutions. Included in the studies on the topic, one can name Yang (2015), Griva and Chostelidou (2011), Dafouz and Camacho-Miñano (2016), and Escobar and Arnau (2018).

In this study we intend to answer the following research questions:

1. Who shows a greater degree of satisfaction with their degree: students enrolled in the bilingual program or non-bilingual program?
2. Who achieves higher levels of academic performance: students in the bilingual or non-bilingual program?

In order to be able to adequately interpret the second research question and the obtained results therein, it is essential to define "academic performance" as a concept and explain how it has been measured in this study. Although academic performance is sometimes measured exclusively by means of a test or an essay, we have only considered the final grades from 19 different subjects. These marks include the results from the exams applied by each professor, which account for 50-60 % of the final grade, and the evaluation of class attendance and participation in class activities related to the syllabus, which account for the remaining 40-50 %. The results obtained with regard to the two research questions will allow us to better understand if some professionals are justified in their doubts as to what students who study in a foreign language actually learn. Moreover, the results will provide us insight into whether or not the education provided in the bilingual program is better, worse, or practically the same as in the non-bilingual program.

2. METHOD

The cross-sectional study presented herein is an example of applied research of a descriptive and quasi-experimental character. While it is fundamentally quantitative, an item of this study did collect qualitative data.

2.1. Participants

The number of participants in this inquiry was 1,057, all of whom were from the Faculty of Education at the University of Granada. There was a total of 630 students (428 males and 202 females) in the monolingual program (non-EMI students) and 427 (85 males and 342 females) in the bilingual section (EMI students). All students were enrolled in the course subjects as shown in Table 1. Evidently, there was a predominance of female students in the program, which frequently occurs in Spanish education faculties. In many cases, the same students were enrolled in multiple course subjects.

Table 1. List of course subjects and number of enrolled students that facilitated their final grades

COURSE SUBJECTS	NON-EMI STUDENTS	EMI STUDENTS
Developmental Psychology (v1)	174	222
Sociology of Education (v2)	175	223
Mathematics (v3)	173	221
Visual Arts (v4)	176	222
Educational Psychology (v5)	142	181
Didactics: Teaching Theory and Practice (v6)	140	186
Learning Disabilities (v7)	61	62
Didactic and Technological Resources (v8)	70	66
School Organization (v9)	69	67
Teaching and Learning Mathematics (v10)	67	66
Foreign Language Didactics (v11)	64	65
Attention to Diversity (v12)	68	66
Tutoring Action (v13)	29	31
Mathematics Curriculum Design (v14)	29	32
Music Education (v15)	30	31
Teaching and learning of EFL (v16)	74	44
Anglo-American Culture (v17)	127	40
Communicative Competence in English (v18)	127	65
Teaching of Fiction (v19)	106	41

2.2. Data collection instruments

The final grades obtained in each of the 19 course subjects in Table 1 were provided by the students in class by consulting their transcripts in accordance with the questionnaire available in the appendix. This data was collected during the academic terms of 2016-2017, 2017-2018, and 2018-2019. Additionally, the questionnaire included item number 20 in reference to the student's overall level of satisfaction with the degree course by using a 1-5 point Likert scale.

The 19 subjects of study were offered to the bilingual degree group in English and to the non-bilingual group in their native Spanish. Although the professors in the bilingual and non-bilingual degree programs were different, they taught the same course subjects, regardless of the language, and followed the same syllabus with the same objectives, contents, methodology, and evaluation criteria.

2.3. Institutional context

The professors teaching bilingual lessons at the University of Granada's Faculty of Education place a greater emphasis on the teaching of subject matter related to each course syllabus than on the linguistic aspects of the English language, which is taught and reinforced implicitly as a result of its intensive use and practical application in class. Again, for this reason we have used the terms "bilingual students" or "EMI students" and "non-bilingual students" or "non-EMI students" as synonyms. With this current degree offering, the faculty's main objective is to offer graduates of the primary school teaching degree course an education that responds to society's demand for foreign language competence, which will in turn facilitate increased competitiveness and mobility for graduates in an evermore interdependent and globalized economy, which values language skills as an indispensable necessity (Madrid-Manrique & Madrid, 2014).

2.4. Data analysis and statistical calculations

The statistical analysis of this study's data was performed using IBM's SPSS Statistics 20. We calculated the basic descriptive statistics (mean and standard deviation) and subsequently, we checked for differences in statistical significance amongst students. To that end, we applied Student's t-test or the Mann-Whitney U test according to the parametric and non-parametric distributions of student grades with a level of significance of 95 % ($p \leq 0.05$). In order to check the statistical significance, Cohen's d was also calculated to measure effect size. Having established the general line of research, methodology, and context, we will now present and discuss the results obtained.

3. RESULTS AND DISCUSSION

The mean values for student grades in the 19 course subjects are presented in Table 2. The table demonstrates that the average grades are high for EMI students, who scored a 70 % or higher in every subject except for Mathematics.

Table 2. Average grades (scale 1-10) and standard deviation in 19 subjects

COURSE SUBJECTS	NON-EMI STUDENTS		EMI STUDENTS	
	<i>Mean</i>	<i>S. D.</i>	<i>Mean</i>	<i>S. D.</i>
Developmental Psychology (v1)	7,17	1,24	7,18	0,96
Sociology of Education (v2)	7,74	1,33	7,89	1,35
Mathematics (v3)	6,89	1,51	6,55	1,54
Visual Arts (v4)	7,87	1,07	7,96	1,12
Educational Psychology (v5)	7,33	1,13	7,81	1,08
Didactics: Teaching Theory and Practice (v6)	7,46	1,32	7,82	1,17
Learning Disabilities (v7)	7,86	0,95	7,03	,87
Didactic and Technological Resources (v8)	8,05	1,04	8,27	,97
School Organization (v9)	7,30	1,61	7,47	1,20
Teaching and Learning Mathematics (v10)	7,06	1,08	7,48	,99
Foreign Language Didactics (v11)	7,60	1,23	7,46	,99
Attention to Diversity (v12)	7,79	1,39	8,04	1,07
Tutoring Action (v13)	7,80	1,33	8,82	1,67
Mathematics Curriculum Design (v14)	7,44	1,37	9,00	,98
Music Education (v15)	8,40	1,28	8,62	1,22
Teaching and learning of EFL (v16)	7,98	,98	8,57	1,07
Anglo-American Culture (v17)	6,89	1,58	8,39	1,59
Communicative Competence in English (v18)	6,73	1,69	7,93	1,31
Teaching of Fiction (v19)	7,03	1,88	8,53	1,14

In reference to the level of student satisfaction with the degree program (v20), the results indicate that both groups experienced a high level of satisfaction. While the average level of satisfaction amongst the non-EMI students ($m=3.81$, $SD=0.80$) is slightly higher than that of the EMI students ($m=3.73$, $SD=0.75$), the differences were not statistically significant ($p=0,44$). The results obtained for student satisfaction are from the questionnaire's item 20 and are displayed in Table 3.

Table 3. Level of student satisfaction with the degree program (expressed in percentages)

V20. How satisfied are you with the degree program?		
	NON-EMI STUDENTS (%)	EMI STUDENTS (%)
Not at all	0	0
A little	3.6	2.8
Average	32.4	36.6
Quite	43.3	45.0
A lot	20.7	15.6
Total	100	100

3.1. Students explain their level of satisfaction with the degree program

3.1.1. *Non-EMI students*

The cohort of non-EMI students was less critical than the EMI cohort when asked to explain their level of satisfaction with the degree program. Despite their being somewhat less satisfied, EMI students did just justify their position. On the other hand, a great majority of non-EMI students, at 64 %, expressed their satisfaction with the degree program because they liked it, have a sense of vocation and love teaching, love children, and want to work in a school. Some even considered their degree a lifelong dream.

However, students did provide some criticism that we will now summarize.

For example, a total of 13% regarded the approach in many course subjects to be inadequate as the course aims were seen as too theoretical and not practical enough. For this reason, many students did not consider the program to provide them with the necessary preparation to teach in a school classroom in the future as the course subjects did not teach them what they needed to know and many subjects did not provide adequate instruction in primary classroom teaching techniques. Moreover, 21 % of students complained about the teaching methodology employed by professors and their teaching styles, which were not viewed as the most suitable. In reference to the unsuitable nature of classroom methodologies, one student opined, “To spend two hours watching somebody read from a screen, I would prefer to stay home and read it myself”. For some, the teaching methods employed were “monotonous and boring” and “did not correspond with a modern and innovative education”. A few students complained of various inconsistencies between what lecturers (teacher trainers) taught in class and how they taught it; they essentially did not practice what they preached. In addition, they also detected a certain lack of motivation and interest on the part of lecturers while giving lessons.

3.1.2. *EMI students*

As can be seen in Table 3, the EMI students reported a slightly lower level of satisfaction than the non-EMI students even though these differences were not found to be statistically significant. These students were more critical of the program and the type of lectures they received. Among program strengths, the bilingual students expressed a high degree of satisfaction due to their sense of vocation, the fact that they chose the degree because they liked it, their personal interest in this line of studies, and the desire to pursue a degree in education. Secondly, they also emphasized the advantages of this degree because it contributes to improving linguistic competence in English and they expected that English proficiency would provide them with more opportunities and help them to find a good job in the future (Madrid & Julius, 2020). Nevertheless, they also mentioned various areas for improvement.

The greatest weaknesses of the program were found to be the excessive attention given to teaching theory, which was to the detriment of practical training; the uselessness of some courses for their preparation as future teachers; the inappropriate methodological approach to many subjects; and the lack of preparation to work in schools. The students did not appreciate the teaching approach taken in many subjects as methods were seen as too theoretical and neglectful of instruction in the actual techniques necessary to teach specific subjects

in schools. In reality, the students were more interested in receiving instruction in how to teach in an attractive, innovative, and creative style. Various comments underscored this idea: “Teacher training exercises should consist of activities related to teaching at school and not theoretical work”; “They provided us with a great deal of theory but very few opportunities to put it into practice”; and “The classes are often unhelpful for our profession”.

Additionally, several students criticized the professors for a lack of motivation, imagination, and variety. Students also reported that some professors did not demonstrate sufficient control of the language to teach in English. Another common point of criticism was the fact that bilingual degree is not officially recognized and differentiated from the monolingual degree. Currently, the bilingual nature of their studies is simply a supplement to the degree, which is not officially recognized as a bilingual degree.

Finally, we also collected other more infrequent comments, but that does not mean they are of any lesser importance. The following may identify other potential areas for improvement:

- Sometimes, workshops are not very closely related to theoretical class.
- Classes need to be more dynamic, collaborative, and motivational.
- The course syllabuses are overloaded.
- Professors are more demanding in the bilingual program than in the non-bilingual program.
- Professors lecture us on methodologies that they do not apply in their classes.
- Some professors in the EMI program should be native English speakers.
- Course subjects need more and improved scaffolding techniques.
- Professors are more focused on their research than they are on the quality of their teaching.

Although the average grades in the 19 course subjects and the level of satisfaction are rather similar between the two programs (see Table 2), as discussed below, a number of statistically significant differences were present.

3.2 Significant differences

We have checked if the differences between the two groups have statistical significance and in the case of statistically significant differences, Cohen’s *d* was applied to measure the size of the effect in order to determine the degree of significance. The comparison of the mean of the two collectives shows us that significant differences do not exist between the EMI and Non-EMI students in eight subjects. This similarity in academic performance has also been observed in other studies (Arnau, Borrás-Comes & Escobar, 2018). Escobar and Arnau (2018, p. 141) showed that statistically significant differences existed between the academic performance of the bilingual and non-bilingual collectives in two subjects, both of which were in favor of the former. However, the non-bilingual students outperformed in four subjects and the differences were of statistical significance. In the remaining subjects no significant differences were found.

In this study, statistically significant differences were found in Mathematics and Learning Disabilities in favor of the non-EMI students. Cohen’s *d* values, which are included in Table 4, indicate the difference is very small in Mathematics ($d=0.22$) and fairly considerable in Learning Disabilities ($d=0.91$).

Table 4. Statistical significance in the academic performance of EMI and non-EMI students

COURSE SUBJECTS	STG.	COHEN'S d	EFFECT SIZE	IN FAVOR OF
Mathematics (v3)	.04	0.22	0.11	Non-EMI
Educational Psychology (v5)	.00	-0.43	-0.21	EMI
Didactics: Teaching Theory and Practice (v6)	.00	-0.28	-0.14	EMI
Learning Disabilities (v7)	.00	0.91	0.41	Non-EMI
Teaching and Learning Mathematics (v10)	.01	-0.40	-0.19	EMI
Tutoring Action (v13)	.00	-0.67	-0.32	EMI
Mathematics Curriculum Design (v14)	.00	-1.30	-0.54	EMI
TEFL (V16)	.00	-0.57	-0.27	EMI
Anglo-American Culture (v17)	.00	-0.94	-0.42	EMI
Communicative Competence in English (v18)	.00	-0.79	-0.36	EMI
Teaching of Fiction (v19)	.00	-0.96	-0.43	EMI

In the remaining nine subjects, four of which belong to the specialized degree route of teaching English as a foreign language, the bilingual students received significantly higher marks than the non-EMI students despite the challenge of doing a degree in a non-native language. These four subjects (v16, v17, v18, and v19) are from the specialized degree route in English teaching, are taught in English, and include subject-specific contents related to the English language and its teaching. The enrolled students in these course subjects were in the fourth year of their degree and they had developed a high level of English proficiency as a result of their previous studies in the bilingual degree program. As such, they had an advantage in academic performance over those completing their studies of those same subjects in their native language (Spanish) (Airey, 2011; Coleman, 2013; Smith, 2004; Unterberger, 2012). It is therefore clear that these differences have statistical significance and in favor of the bilingual collective (EMI students).

What is less evident is the higher level of academic achievement among the bilingual students in the other five subjects (v5, v6, v10, v13, and v14), since they completed their studies in a second language while the non-EMI students studied in their native language. The academic superiority exhibited by the EMI students over the non-EMI students confounds the convictions of skeptics who speak about the harmful effects of bilingual education and those who even believe that students learn less when they study in a language that they do not command as well as their native language (see: Flowerdew, Miller & Li, 2000; Gerber, Engelbrecht, Harding & Rogan, 2005; Wilkinson, 2005).

4. CONCLUSIONS

In this article we have presented a comparative study between the academic achievement of EMI and non-EMI students in their primary school teaching degree and their level of satisfaction with the program. The results allow us to conclude that one cannot affirm

students in bilingual programs learn less and perform more poorly than those in non-bilingual programs studying in their native language since the differences detected between the two collectives were barely statistically significant. In fact, the opposite was sometimes found to occur as the EMI students obtained better results than non-EMI students. In this study as in Arnau, Borrás-Comes, and Escobar (2018), the assimilation of subject-specific contents was not affected by the language of instruction. Furthermore, we have verified that there is also no statistical significance between the two groups when it comes to their level of satisfaction with their degree program. Satisfaction was generally found to be high with an average score very close to four (1-5 Likert scale).

With regard to the teaching methodology employed by professors, the students criticized their approach for being excessively theoretical and for the lack of practical activities in addition to the irrelevance of some subject matter for their interests and needs as future teachers (Madrid, 2003). Generally speaking, the prevailing sentiment is that the professors often do not teach the students how to teach in schools.

The teaching implications of these results are evident, especially if we are of the opinion that university degrees should orientate their courses towards the interests and professional needs of students. What is clear is that much remains to be done to satisfy student demands even while the European Higher Education Area has introduced their paradigm shift in competency-based language teaching, which endeavors to develop the general and specific professional competencies demanded by a variety of professional profiles (Perez Cañado, 2013).

Finally, we trust the results of this study provides additional evidence that bilingual degrees provide university students with a great opportunity to improve their English language skills while they master subject-specific contents and develop their professional competencies. Moreover, we believe bilingual students achieve the same academic standards as those students who complete a degree in their native language without compromising their specialized training.

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APPENDIX 1

ACADEMIC ACHIEVEMENT OF EMI AND NON-EMI PRIMARY EDUCATION DEGREE STUDENTS

Year circle: 1st 2nd 3rd 4th *Sex: male* _____ *female* _____
Degree: monolingual (non-EMI) _____ *bilingual (EMI)* _____

Write the grade that you obtained in the following course subjects. Leave blank the courses that you have not completed.

<i>Course Subjects</i>	<i>Grade (0 to 10)</i>
1st Year	
V1. Developmental Psychology (Semester 1)	
V2. Sociology of Education (S1)	
V3. Mathematic Bases in P. Ed. (S1)	
V4. Teaching and Learning of Visual Arts (S1)	
V5. Educational Psychology (Semester 2)	
V6. Didactics: Teaching Theory & Practice (S2)	
2nd Year	
V7. Learning Disabilities (S1)	
V8. Didactic and Technological Resources (S1)	
V9. School Organization (S2)	
V10. Teaching and Learning Mathematics (S2)	
V11. Foreign Language and its Didactics (S2)	
V12. Attention to Diversity in Primary Education (S2)	
3rd Year	
V13. Tutoring Action in Primary Education (S2)	
V14. Design and Mathematics Curriculum Development (S2)	
V15. Music Education (S2)	
4th Year	
V16. Teaching of English as a Foreign Language (TEFL) (Major) (S1)	
V17. Teaching of Anglo-American Culture (Major) (S1)	
V18. Communicative Competence in English (Major) (S1)	
V19. Teaching of Fiction (Major) (S1)	

V20. How satisfied are you with the degree program that you are doing? (Circle your answer)

1= Not at all 2=A little 3= Average 4=Quite a lot 5=A lot

Why?

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